

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Tianqing He et al.
Application No.: 10/714,471
Filed: November 15, 2003
For: **DEVICE AND METHODS FOR RAPID DRYING OF POROUS MATERIALS**

Confirmation No.: 2502
Group Art Unit: 3743
Examiner: Jiping Lu

May 11, 2010

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S REPLY BRIEF UNDER 37 C.F.R. § 41.41

Sir:

This Reply Brief is filed in response to the Examiner's Answer dated March 17, 2010 (the "Examiner's Answer").

It is not believed that either an extension of time or payment of any additional fees is required, beyond those otherwise provided for in documents accompanying this paper. In the event, however, that an additional extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned under 37 C.F.R. §1.136(b). Any additional fees believed to be due in connection with this paper may be charged to our Deposit Account No. 50-0220.

Appellant will refrain from readdressing all of the deficiencies with regard to the pending rejections; instead, in the interest of brevity, Appellant incorporates herein the arguments set out in Appellant's Brief on Appeal filed February 27, 2008 (hereinafter, the "Appeal Brief"), as if set forth in their entirety. Appellant will only address herein: 1) the allegation made at pages 2-3 of the Examiner's Answer that the summary of the claimed subject matter is deficient; 2) the new ground of rejection made at pages 3-4 of the Examiner's Answer; and 3) the new arguments made at pages 12-24 of the Examiner's Answer.

I. The Summary of Claimed Subject Matter is Sufficient

The Examiner's Answer states that the summary of claimed subject matter in the Appeal Brief is deficient because the application does not support the claimed pressure range of less than 10 TORR. Examiner's Answer, pp. 2-3. Appellant respectfully disagrees in view of the arguments set forth below.

II. The New Ground of Rejection is Erroneous

Claims 1, 3-10, 21, 23 and 27-34 now stand rejected under U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner's Answer states that:

The claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed limitation regarding the air pressure in the chamber is "less than 10 TORR" in claims 1 and 23 constitutes new matter which is not supported by the originally filed specification. The originally filed specification only discloses that the pressure inside the chamber drops below *approximately* 10 TORR (emphasis added also see page 7, line 16 of the specification). The term "approximately 10 TORR" could be interpreted as greater than 10 TORR, for example 11 TORR, or lower than 10 TORR, for example 9 TORR, or equal to 10 TORR. By claiming "less than 10 TORR" after original filing of the application, applicant either broadened or narrowed the scope of the invention. Therefore, this broadened or narrowed amended version of the numerical range of the pressure constitutes new matter not supported by the originally filed specification.

Examiner's Answer, p. 4. Appellant respectfully disagrees.

The Federal Circuit recently affirmed that 35 U.S.C. § 112, first paragraph, contains a written description requirement separate from enablement. *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 2010 U.S. App. LEXIS 5966, *41 (Fed. Cir. 2010). However, the specification need not recite the claimed invention *in haec verba*. *Id.* at *45. The test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the

filings date. *Id.* at *41-42 (quoting *Ralston Purina Co. v. Far-Mar-Co., Inc.*, 772 F.2d 1570, 1575 (Fed. Cir. 1985)).

The Examiner has the initial burden of establishing a *prima facie* case of lack of written description. A description as filed is presumed to be adequate unless or until sufficient evidence or reasoning to the contrary has been presented by the Examiner to rebut the presumption. MPEP § 2163.04. The Examiner has the initial burden of presenting by a preponderance of the evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. MPEP § 2163, II.A.3(b) (quoting *In re Wertheim*, 541 F.2d 257, 263 (CCPA 1976)).

A. The Examiner Has Not Met the Initial Burden

Appellant respectfully submits that the Examiner has not met the initial burden of presenting by a preponderance of the evidence why a person skilled in the art would not recognize in the instant specification a description of the claimed invention. The Examiner only makes a broad argument that the claim recitations at issue are not supported by the specification because the recitations do not match word-for-word with the language in the specification. The Examiner merely states that the term "approximately 10 TORR" in the specification could mean anything from 9-11 TORR, but does not adequately explain why one of ordinary skill in the art would not recognize that the inventors had the claimed invention (*i.e.*, "less than 10 TORR") in their possession as of the filing date. The specification states that "if the pressure in the chamber drops below approximately 10 TORR, which is known to be the pressure when the chamber is completely dry, then there is no moisture in the system." Specification, page 7, lines 14-16 (emphasis added). Appellant respectfully submits that this term means less than 10 TORR, not less than 9-11 TORR. Furthermore, Appellant believes that the impropriety of this new ground of rejection is further evidenced by the fact that it was not introduced until the Examiner's Answer.

B. Explicit Support for the Recitations at Issue Can be Found in the Originally Filed Specification

To comply with the written description requirement, each claim limitation must be expressly, implicitly, or inherently supported in the originally filed disclosure. MPEP §

2163.05. Even if it is determined that the Examiner has met the initial burden, Appellant submits that explicit support for the claimed subject matter can be found in the originally filed specification. Independent Claims 1 and 23 are reproduced below with the recitations at issue emphasized.

1. A method for rapid drying a porous sample of material, said method comprising the steps of:

- (a) placing a porous sample of material into a sealable chamber;
- (b) creating a strong vacuum inside said chamber by evacuating air from inside of said chamber after it is sealed until air pressure inside said chamber is less than 10 TORR;
- (c) passing evacuated air from said sealable chamber through a cold trap to trap moisture in said evacuated air;
- (d) heating interior of said sealable chamber to a temperature within a predetermined range.

23. An apparatus for rapid drying a porous sample of construction material comprising:

- (a) a sealable chamber with at least one outlet;
- (b) a cold trap in fluid communication with said sealable chamber through said outlet;
- (c) means for creating a strong vacuum in fluid communication with said cold trap and said sealable chamber; whereby said means for creating a vacuum will evacuate air from said sealable chamber until air pressure in said sealable chamber is less than 10 TORR, said evacuated air passing through said cold trap before reaching said means for creating a vacuum;
- (d) means for heating said sealable chamber to heat said porous sample inside of said sealable chamber to within a predetermined temperature range.

The specification at several points describes that the porous sample may be completely dry when a predetermined level of vacuum in the chamber is achieved. *See, e.g.*, page 7, lines 11-13; page 12, lines 2-5; page 13, lines 10-15; page 15, lines 19-21; and Original Claims 7, 17, 30 and 39. In particular, the specification states:

These processes will continue until there is a determination made that there has been a complete loss of moisture in the sample. This can be measured in a variety of ways, including the degree of vacuum obtained within the sample chamber or a

change of weight in the sample itself. For example, if the pressure inside the chamber drops below approximately 10 TORR (10mm Hg), which is known to be the pressure when the chamber is completely dry, then there is no moisture in the system.

Specification, page 7, lines 11-16 (emphasis added).

Appellant respectfully submits that at least the underlined portion of the above passage provides explicit support for the recitation "less than 10 TORR." The word "approximately" was originally used to provide a range above 10 TORR as is customary. However, the "below" qualifier has been ignored as the primary qualifier of the objected to pressure range.

C. In the Alternative, Implicit or Inherent Support for the Recitations at Issue Can be Found in the Originally Filed Specification

Even if the Board disagrees and deems that the recitation "less than 10 TORR" is not explicitly disclosed in the specification, Appellant respectfully submits that the recitation is implicitly or inherently disclosed in the specification. That is, it would be clear to one of ordinary skill in this art that the inventors had possession of the claimed subject matter as of the filing date. Appellant notes that the Federal Circuit has held that, in this regard, "the level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity of the and predictability of the relevant technology." *Ariad* at *43. In contrast to the biological and chemical fields, the mechanical field is generally considered to be relatively well understood and predictable. This provides further support to the argument that it would be clear to those of skill in this art that the inventors were in possession of the claimed "less than 10 TORR."¹

The Federal Circuit "has repeatedly stated [that] the purpose of the written description requirement is to ensure that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor's contribution to the field of art as described in the patent specification. *Ariad* at *50. Here, the disputed claim recitations clearly do not overreach the scope of the inventors' contribution to the field as described in the

¹ Appellant respectfully submits that the Examiner's arguments at least with respect to the prior art rejections of Claim 23 buttress Appellant's assertion that it is known to those of skill in this art that pressures less than 10 TORR indicate complete drying. *See, e.g.*, Section III.B below.

specification. At the very least, the specification states that the chamber is completely dry when the vacuum drops below approximately 10 TORR.

This is not a case in which the inventors were trying to "hide the ball." Instead, the specification clearly puts in the public domain the concept that the chamber is completely dry if the air pressure drops below 10 TORR, as would be understood by those of ordinary skill in this art.

D. Conclusion

In sum, Appellant submits that the Examiner has failed to establish a *prima facie* case of noncompliance with the written description requirement. In fact, Appellant submits that the disputed recitation is explicitly supported by the originally filed specification. Alternatively, Appellant submits that the recitation is implicitly or inherently supported because those of ordinary skill in the art would clearly recognize that the inventors had the claimed invention in their possession as of the filing date and the omission of the word "approximately" merely narrows the claim scope.

III. Examiner's Answer -- Response to Arguments

In the "Response to Argument" section beginning on page 12, the Examiner's Answer attempts to rebut Appellant's arguments set forth in the Appeal Brief. Appellant responds briefly below to the arguments in this section of the Examiner's Answer.

A. The Withdrawn Section 102 (b) Rejection of Claim 23

Appellant appreciates the Examiner's acknowledgement that independent Claim 23 is not anticipated by U.S. Patent No. 4,882,851 to Wennerstrum et al. ("Wennerstrum") and the accompanying withdrawal of the rejection of Claim 23 under Section 102(b).

B. The Section 103(a) Rejection of Claim 23 based on Wennerstrum

The Examiner maintains the rejection of Claim 23 under Section 103(a), alleging that Claim 23 is obvious over Wennerstrum. Examiner's Answer, pp. 12-14. Appellant continues to disagree.

Claim 23 recites an apparatus for rapid drying a porous sample of construction material comprising, *inter alia*, means for creating a strong vacuum in fluid communication

with said cold trap and said sealable chamber; whereby said means for creating a vacuum will evacuate air from said sealable chamber until air pressure in said sealable chamber is less than 10 TORR. As described above in Section II, the recitation "less than 10 TORR" is supported by the specification, and the focus of the patentability inquiry based on Wennerstrum should be whether Wennerstrum discloses or suggests the invention as claimed.

Appellant maintains that Wennerstrum does not disclose or suggest, and in fact teaches away from, evacuating air from a chamber until the pressure is less than 10 TORR. Wennerstrum teaches that "different products may require different degrees of solvent retained within the product; complete drying is rarely desirable." Wennerstrum, Col. 3, lines 20-22. Wennerstrum explains the drawback in complete drying in that the "product temperature will begin a sudden increase when solvent vaporization has been nearly completed," and this could result in damage to the product being partially dried. Wennerstrum, Col. 15, lines 2-4. Wennerstrum also teaches that "[i]n most drying operations, the vacuum is pulled until the pressure in the drying chamber is between ten and thirty-five torr." Wennerstrum, Col. 13, lines 21-23. Therefore, Appellant respectfully submits that Wennerstrum teaches away from evacuating air from a sealable chamber until the air pressure in the chamber is less than 10 TORR, as recited in Claim 23.

The Examiner argues that "it would have been obvious to one skill in the art to operate the sealable chamber 10' of Wennerstrum et al. at the pressure less than 10 torr in order to obtain optimal drying result." Examiner's Answer, p. 14 (emphasis added). Appellant would like to make two points with regard to the Examiner's position.

First, it is once again emphasized that Wennerstrum clearly teaches that complete drying is not desirable, and that the pressure should be maintained between 10 and 35 TORR. Therefore, it would not be obvious to one of ordinary skill in the art to reduce the pressure to less than 10 TORR, because Wennerstrum simply teaches away from such an "optimal drying result," such as complete drying that can be accomplished by reducing the pressure under Wennerstrum's range.

Second, the Examiner's Section 103 argument appears to concede that those of ordinary skill in this art know 10 TORR is the pressure below which "optimal" drying (*i.e.*, complete drying) occurs. This position contradicts the Examiner's other argument that the recitation "less than 10 TORR" fails the written description requirement under Section 112. More particularly, the Examiner's argument with respect to Wennerstrum provides support

that the disclosure of the present application reasonably conveys to those skilled in the art that the inventors had possession of the claimed subject matter as of the filing date.

Finally, the Examiner states that "the appellant never explains any criticality of 'less than 10 TORR,'" and therefore this recitation is "merely an arbitrary pressure." Examiner's Answer, p. 14. However, Appellant submits that Wennerstrum itself teaches the criticality of "less than 10 TORR." Again, Wennerstrum teaches that complete drying is undesirable, and that the vacuum should not be maintained at a pressure of less than 10 TORR. Thus, the Examiner's own reference teaches the criticality of this pressure.

For at least the foregoing reasons, Appellant respectfully maintains that Claim 23 and the dependent claims thereof are patentable over the cited art, and requests that the final rejection of Claim 23 and the claims depending therefrom be reversed.

C. Claims 27, 28, 30 and 31

The Examiner maintains the rejections of Claims 27, 28, 30 and 31 under Section 103(a), alleging that these claims are obvious over Wennerstrum in view of U.S. Patent No. 5,546,678 to Dhaemers ("Dhaemers"). Examiner's Answer, pp. 14-15.

Appellant traverses these rejections at least because Claims 27, 28, 30 and 31 depend from Claim 23, which Appellant submits is allowable for at least the reasons set forth above. Furthermore, these dependent claims are separately patentable.

Claim 27 depends from Claim 23 and recites that the means for heating [the sealable chamber to heat the porous sample inside of the sealable chamber to within a predetermined temperature range] is an infrared lamp. The Examiner states that "Dhaemers is used by the examiner for the teaching of using infrared lamp as a suitable equivalent heater [to that of Wennerstrum]." Examiner's Answer, p. 15. Appellant respectfully submits that it would not have been obvious to one of ordinary skill in the art to modify the Wennerstrum device such that the product would be heated by an infrared lamp rather than by microwave energy. The Wennerstrum device is specifically designed for microwave drying. For example, the device includes a wave guide "for good transmission and total containment of the microwaves" (Col. 6, lines 13-15), an agitation mechanism such that the product "will be agitated during the drying process, such that the effects of uneven microwave distribution will be minimized" (Col. 9, lines 28-31), seals to "prevent microwave leakage" (Col. 10, lines 22-25), and "microwave power sensors" (Col. 14, lines 4-8), to name just a few features. Appellant

submits that one of ordinary skill in the art would not be motivated to modify the carefully designed Wennerstrum device to disable the microwave (and ignore all the associated built-in features) and implement an infrared lamp in its stead.

For at least these reasons, Appellant respectfully submits that Claim 27 is separately patentable and respectfully requests that the final rejection of Claim 27 is improper and should be reversed. Claims 28, 30 and 31 depend from Claim 27. Appellant further submits that these claims are also patentable over the cited art for at least the above reasons and therefore requests that the rejections thereto also be reversed.

D. Claims 29, 33 and 34

The Examiner maintains the rejections of Claims 29, 33 and 34 under Section 103(a), alleging that these claims are obvious over Wennerstrum in view of Dhaemers and further in view of U.S. Patent No. 6,085,443 to Hunter et al. ("Hunter"). Examiner's Answer, pp. 15-16.

Claims 29, 33 and 34 depend from Claim 27. Therefore, Appellant respectfully submits that these claims are patentable for at least the reasons set forth above in reference to Claims 23 and 27.

E. Claim 32

The Examiner maintains the rejection of Claim 32 under Section 103(a), alleging that Claim 32 is obvious over the combination of Wennerstrum, Dhaemers and U.S. Patent No. 6,410,889 to Davis et al. ("Davis"). Examiner's Answer, p. 16.

Claim 32 depends from Claim 27. Therefore, Appellant respectfully submits that Claim 32 is patentable for at least the reasons set forth above in reference to Claims 23 and 27.

F. The Section 103(a) Rejection of Claim 1

The Examiner maintains the rejection of Claim 1 under Section 103(a), alleging that Claim 1 is obvious over Wennerstrum in view of U.S. Patent No. 4,107,049 to Sano et al. ("Sano"). Appellant continues to respectfully disagree. Claim 1 is reproduced below for the Board's convenience.

1. A method for rapid drying a porous sample of material, said method comprising the steps of:

- (a) placing a porous sample of material into a sealable chamber;
- (b) creating a strong vacuum inside said chamber by evacuating air from inside of said chamber after it is sealed until air pressure inside said chamber is less than 10 TORR;
- (c) passing evacuated air from said sealable chamber through a cold trap to trap moisture in said evacuated air;
- (d) heating interior of said sealable chamber to a temperature within a predetermined range.

The Examiner states:

Sano et al teach a method for drying porous material with the step of vacuuming the sealable chamber 5 under a pressure of 0.01 to 10 torr. It is true that the porous material of Sano et al. is dried at room temperature first. However, the porous material of Sano et al. will be further dried by vacuum the air/gas containing moisture out of the chamber under a pressure of 0.01 to 10 torr. The porous material of Sano et al. will also be dried when it is heated under the high temperature of the plasma. Both steps of vacuuming the chamber and exposing the porous material in the plasma will inherently perform a function of drying the porous material. Therefore, it is the examiner's position that it would have been obvious to one skill in the art to modify the drying method of Wennerstrum et al. to include the step of drying the porous material within the sealable chamber under pressure less than 10 torr as taught by Sano et al. in order to obtain an optimal drying result.

Examiner's Answer, pp. 17-18 (emphasis added).

Appellant strongly disagrees. As an initial matter, Sano only teaches that a wet membrane is dried overnight, and then the dried membrane is placed in the chamber such that it can be exposed to plasma. *See, e.g.*, Sano, Col. 6, lines 12-21 and lines 40-42; Col. 7, lines 23-25. Therefore, even though Sano teaches a chamber that can be evacuated to a pressure of 0.01 TORR to 10 TORR, there is no teaching or suggestion this arrangement is used for drying a porous sample of material.

Moreover, even assuming that Sano taught drying in a chamber at less than 10 TORR, it would not be obvious to one of ordinary skill in the art to modify Wennerstrum to include the teachings of Sano. As described in more detail above, Wennerstrum teaches that

complete drying is undesirable, and that the vacuum should be maintained at a level between 10 TORR and 35 TORR. Therefore, one of ordinary skill would not modify the Wennerstrum device to reduce the level of the vacuum below 10 TORR, as taught by Sano, because this would lead to complete drying and result in overheating and damaging the product.

For at least these reasons, Appellant submits that the cited art does not teach or suggest the subject matter of Claim 1, and therefore respectfully requests that the rejection thereto be reversed. Claims 3-10 and 21 depend from Claim 1 and therefore should be patentable over the cited art for at least the same reasons.

G. Claims 3-5 and 7-8

The Examiner maintains the rejection of Claims 3-5 and 7-8 under Section 103(a), alleging that these claims are obvious over Wennerstrum in view of Sano and further in view of Dhaemers. Examiner's Answer, pp. 18-19. Claim 3 depends from Claim 1 and recites that the heating step includes heating the interior of the sealable chamber by supplying infrared light energy to the interior of the sealable chamber.

With regard to Claim 3, the Examiner states that "[t]he Examiner uses the combination of Wennerstrum and [Sano] and then adds the infrared light as taught by Dhaemers." Examiner's Answer, p. 18. Appellants traverse this rejection for substantially the same reasons set forth above in reference to Claim 27. *See* Section III.C. Briefly, it would not be obvious to one of ordinary skill in the art to modify the Wennerstrum device, which employs microwave energy for heating and includes numerous features to accommodate this microwave energy, to use an infrared lamp to heat the product held in the chamber.

For at least these reasons, Appellant respectfully submits that Claim 3 is separately patentable and respectfully submits that the final rejection of Claim 3 is improper and should be reversed. Claims 4, 5, 7 and 8 depend from Claim 3. Appellant further submits that these claims are also patentable over the cited art for at least the above reasons and therefore requests that the rejections thereto also be reversed.

H. Claims 6 and 9

The Examiner maintains the rejections of Claims 6 and 9 under Section 103(a), alleging that these claims are obvious over Wennerstrum in view of Sano and Dhaemers and further in view of Hunter. Examiner's Answer, p. 19.

Claims 6 and 9 depend from Claim 3. Therefore, Appellant respectfully submits that these claims are patentable for at least the reasons set forth above in reference to Claims 1 and 3.

I. Claims 10 and 21

The Examiner maintains the rejection of Claims 10 and 21 under Section 103(a), alleging that these claims are obvious over the combination of Wennerstrum, Dhaemers and Davis. Examiner's Answer, p. 19.

Claims 10 and 21 depend from Claim 3. Therefore, Appellant respectfully submits that Claims 10 and 21 are patentable for at least the reasons set forth above in reference to Claims 1 and 3.

J. The Alternative Section 103 Rejections of Independent Claims 1 and 23

The Examiner maintains the alternative rejection of independent Claims 1 and 23 under Section 103(a), alleging that Claims 1 and 23 are obvious over Sano in view of Wennerstrum. Examiner's Answer, pp. 19-21. The Examiner takes the position that Sano discloses all the recitations of these claims with the exception of the cold trap, and relies on Wennerstrum as teaching the cold trap.

Appellant disagrees for the reasons set forth above. In particular, Sano does not disclose or suggest a method for drying a porous material as claimed in Claim 1 or an apparatus for rapid drying a porous sample of construction material as claimed in Claim 23. As described in more detail above, the chamber of Sano is used to expose an already dry membrane to plasma.

Furthermore, it would not be obvious to one of ordinary skill in the art to modify the Sano device to include the condenser of Wennerstrum. In Wennerstrum, the product to be partially dried includes solvent. The purpose of the condenser is to remove condensed solvent, for example, before it reaches the vacuum pump. However, the membranes of Sano do not include solvent because they are completely dried before being placed in the chamber.

Therefore, there is absolutely no need to include a cold trap (like the condenser of Wennerstrum) in the Sano device.

For at least these reasons, Appellant respectfully submits that Claims 1 and 23 are patentable over the cited art and respectfully request that the rejections to independent Claims 1 and 23 and claims dependent therefrom be reversed.

K. Claims 3-5, 7, 8, 27, 28, 30 and 31

The Examiner maintains the rejection of these claims under Section 103(a), alleging these claims are obvious over the combination of Sano, Wennerstrum, and Dhaemers. Examiner's Answer, p. 21.

With regard to Claims 3 and 27, the Examiner indicates that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the heating means 2-4 of Sano et al. with an infrared light as taught by Dhaemers in order to supply the heating energy in the infrared range." Examiner's Answer, p. 11.

Appellant do not concede that the transformer 2 and electrodes 3, 4 of Sano can be properly identified as the claimed "heating means." However, even assuming they could, it would not have been obvious to one of ordinary skill in the art to replace these components with an infrared light. The transformer 2 and electrodes 3, 4 of Sano perform a very important function: they expose the dry membrane to plasma, the essential objective of Sano. An infrared light would not provide the function of these specialized components. Accordingly, Appellant strongly asserts that the Examiner's proposed "substitution" is erroneous.

For at least these reasons, Appellant respectfully submits that Claims 3 and 27 are patentable over the cited art and respectfully requests that the rejections thereto be reverse. Claims 4, 5, 7, and 8 depend from Claim 3 and Claims 27, 28, 30 and 31 depend from Claim 23; therefore, for at least the same reasons, Appellant submits that these rejections should be reversed as well.

L. Claims 6, 9, 29, 33 and 34

The Examiner maintains the rejections of these claims under Section 103(a), alleging that these claims are obvious over Sano in view of Wennerstrum and Dhaemers and further in view of Hunter. Examiner's Answer, p. 21.

Claims 6 and 9 depend from Claim 3 and Claims 29, 33 and 34 depend from Claim 27. Therefore, Appellant respectfully submits that Claims 6 and 9 are patentable for at least the reasons set forth above in reference to Claims 1 and 3. Likewise, Appellant respectfully submits that Claims 29, 33 and 34 are patentable for at least the reasons set forth above in reference to Claims 23 and 27.

M. Claims 10, 21 and 32

The Examiner maintains the rejection of Claims 10, 21 and 32 under Section 103(a), alleging that these claims are obvious over the combination of Sano, Wennerstrum, Dhaemers and Davis. Examiner's Answer, p. 22.

Claims 10 and 21 depend from Claim 3 and Claim 32 depends from Claim 27. Therefore, Appellant respectfully submits that Claims 10 and 21 are patentable for at least the reasons set forth above in reference to Claims 1 and 3. Likewise, Appellant respectfully submits that Claim 32 is patentable for at least the reasons set forth above in reference to Claims 23 and 27.

In re: Tianqing He et al.
Serial No.: 10/714,471
Filed: November 15, 2003
Page 15 of 15

CONCLUSION

For at least the reasons set forth above and in the Appeal Brief, Appellant requests reversal of the rejections of the pending claims and passing of the application to issue.

Respectfully submitted,



Stephen J. Petroski
Registration No. 64,947

Customer No. 20792
Myers Bigel Sibley & Sajovec, P.A.
P. O. Box 37428
Raleigh, North Carolina 27627
Telephone: (919) 854-1400
Facsimile: (919) 854-1401

CERTIFICATION OF TRANSMISSION

I hereby certify that this correspondence is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4) to the U.S. Patent and Trademark Office on May 11, 2010.

